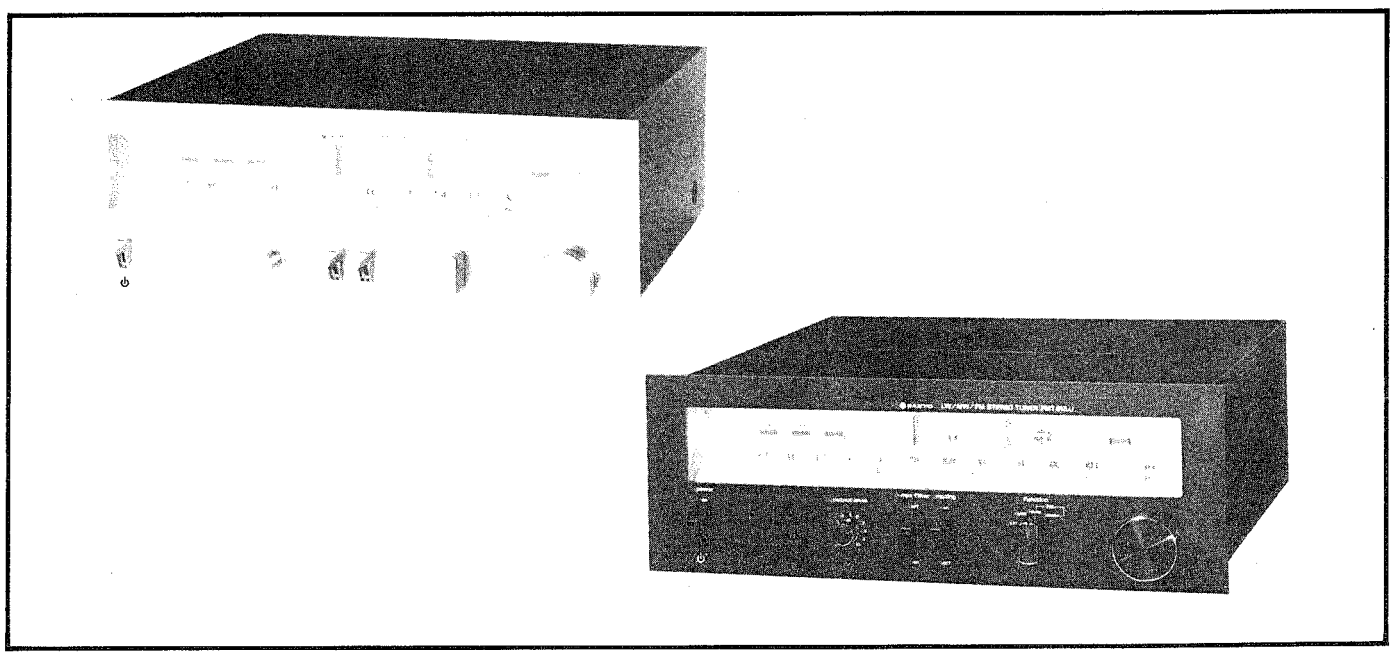
SERVICE MANUAL

SANYO

STEREO TUNER

FMT 611LU
(EUROPE)



SPECIFICATIONS (Nominal)

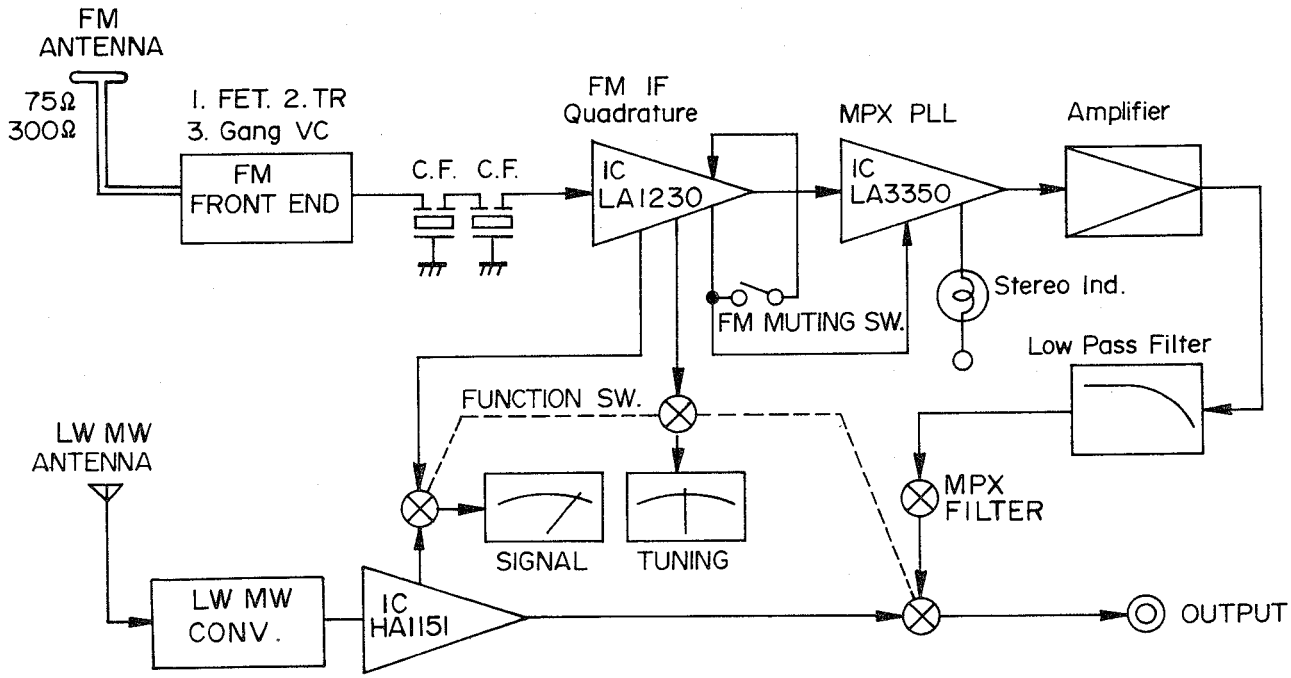
FM SECTION	
Usable Sensitivity	
Mono (DIN)	1.3 μV/8.010 dBf
Stereo	4.8 μV/18.82 dBf
50 dB Quieting Sensitivity	
Mono	2.8 μV/14.14 dBf
Stereo	38 μV/36.79 dBf
Signal-to-Noise Ratio at 1mV	
Mono	70 dB
Stereo	66 dB
Capture Ratio	1.2 dB
Alt. Channel Selectivity (±400 kHz)	65 dB
Image Response Ratio	58 dB
Spurious Response Ratio	85 dB
IF Response Ratio	75 dB
AM Suppression Ratio	60 dB
Total Harmonic Distortion at 1mV	
Mono	0.15 %
Stereo	0.2 %
Stereo Separation (100 Hz/1 kHz/10 kHz)	35 dB/40 dB/35 dB
Sub-Carrier Product Rejection (19 kHz/38 kHz)	70 dB/70 dB
Audio Frequency Response	20 Hz – 15 kHz ±2 dB

MW LW SECTION	MW	LW
Usable Sensitivity	300 μV/m	300 μV/m
Selectivity at ±10 kHz	40 dB	35 dB
Spurious Rejection	45 dB	
Image Response Ratio	50 dB	46 dB
IF Response Ratio	40 dB	
S/N at 100mV/Input	65 dB	56 dB
THD at 10 mV/m Antenna Input		
30 % mod.	0.3 %	
80 % mod.	0.9 %	

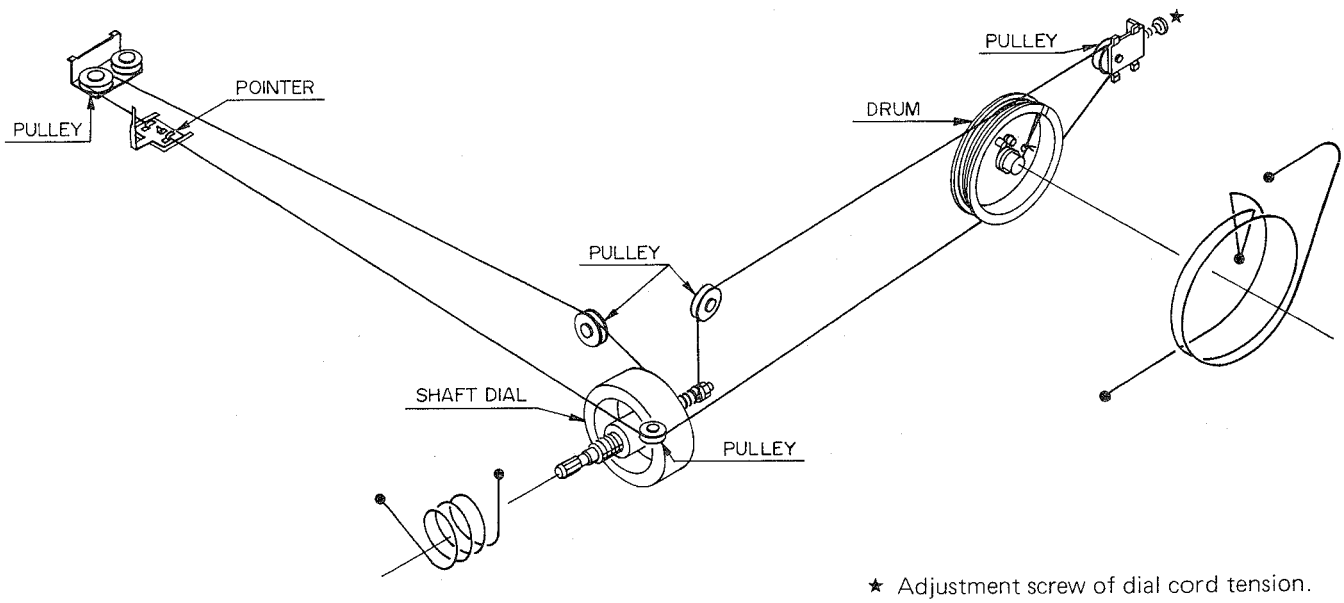
GENERAL SECTION	
Power Requirements	110/220 V AC 50 Hz
Dimensions (W x D x H)	420 x 360 x 150 mm
Weight	6.5 kg

***Specifications are subject to change without notice.**

FUNCTIONAL BLOCK DIAGRAM



DIAL CORD STRINGING



★ Adjustment screw of dial cord tension.

AM-FM RF/IF MPX ADJUSTMENT

AM ADJUSTMENT For alignment: Maintain generator output as low as possible for suitable indication.

Step	Adjusting circuit	Connection		SG. frequency	Position of tuning dial	Adjustment	V.T.V.M. Oscilloscope
		Input	Output				
1	IF	Connect sweep generator to VC 4.	Connect oscilloscope to test point TP 19.	455 kHz	Near max. capacity of VC at position with no signal.	AM 1st 9-21310 AM DET 9-21291	455 kHz
2	MW (RF)	Connect standard loop antenna to output terminal of SG. Place receiver 2 feet from loop antenna.	Connect V.T.V.M. to TP 19.	600 kHz (400 Hz 30% modulation)	600 kHz	MW OSC 9-20851	Max.
3				1400 kHz (400 Hz 30% modulation)	1400 kHz	TC 01 TC 04	
4	LW (RF)			150 kHz (400 Hz 30% modulation)	150 kHz	LW OSC 9-20860	Max.
5				350 kHz (400 Hz 30% modulation)	350 kHz	TC 02 TC 03	
6	Repeat adjustments.						

1. Variable capacitor completely closed
2. Set the dial pointer to very left line of dial scale.
3. Connect sweep generator, SG, V.T.V.M. and oscilloscope.
4. Function switch to "AM"
5. Use a screwdriver with plastic grip for all adjustments.

FM ADJUSTMENT

Step	Adjusting circuit	Connection		SG. frequency	Position of tuning dial	Adjustment	V.T.V.M. Oscilloscope
		Input	Output				
1	IF	Connect sweep generator to test point TP 5 through 0.01 μF.	Connect oscilloscope to test point TP 7.	10.7 MHz (none modulation)	Near max. capacity of VC. at position with no signal.	IFT In FRONT END	10.7 MHz
2	Ratio Det.		Connect oscilloscope to test point TP 6.			FM DET 9-21320	10.7 MHz
3	RF	Connect FM SG. to FM ANT terminals.	Connect V.T.V.M. to output terminal.	90 MHz (400 Hz, 30% modulation)	90 MHz	LA	Max.
4				106 MHz (400 Hz, 30% modulation)	106 MHz	TCA TCR	Max.
5	Repeat adjustments.						

1. Variable capacitor completely closed
2. Set the dial pointer to very left line of dial scale.
3. Connect sweep generator, FM SG, V.T.V.M. and oscilloscope. FM ANT input impedance is 300 ohm.
4. Function switch to "FM"
5. Use a screwdriver with plastic grip for all adjustments.

FM MPX ADJUSTMENT

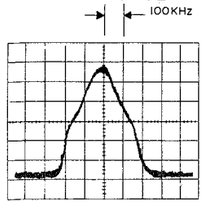
Step	Adjusting circuit	Connection		Position of tuning dial	Adjustment	
		Input	Output			
1	PLL IC FO (19 kHz) Adjustment	None	Connect Frequency counter or synchroscope to TP 8.		Adjust VR01 (5k-B) so that frequency counter or synchroscope indicates 19 kHz.	
2	FM STEREO Signal Separation	As above steps 3,4 except modulation Modulate LEFT Channel ±67.5 kHz — 400 Hz audio and ±7.5 kHz — 19 kHz pilot carrier.	Connect V.T.V.M. to output terminal (R channel).	Near max. capacity of VC. at position with no signal.	VR 02 (1K-B)	V.T.V.M. Min.
3		As above except modulate RIGHT Channel.	Connect V.T.V.M. to output terminal (L channel).			
4	Repeat steps 1, 2. Set at position with max. channel separation.					

1. Variable capacitor completely closed
2. Connect FM stereo SG and V.T.V.M.
3. Function switch to "FM"
4. Use a screwdriver with plastic grip for all adjustments.

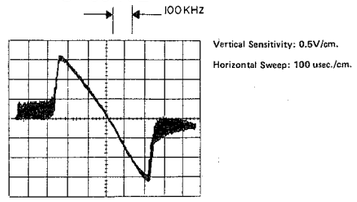
ALIGNMENT WAVE FORMS

WITH OSCILLOSCOPE TIME BASE SETTINGS

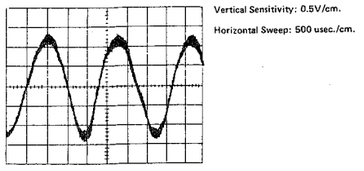
FM IF CURVE



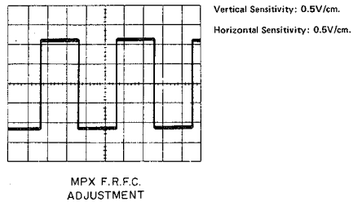
S-CURVE



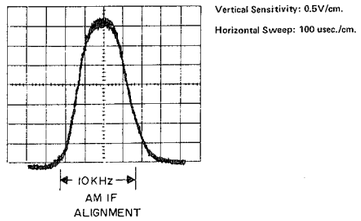
SINE WAVE



SQUARE WAVE

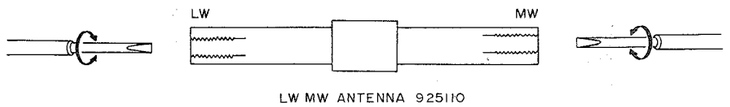


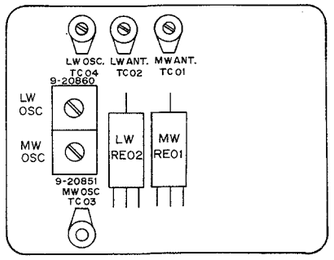
AM IF CURVE

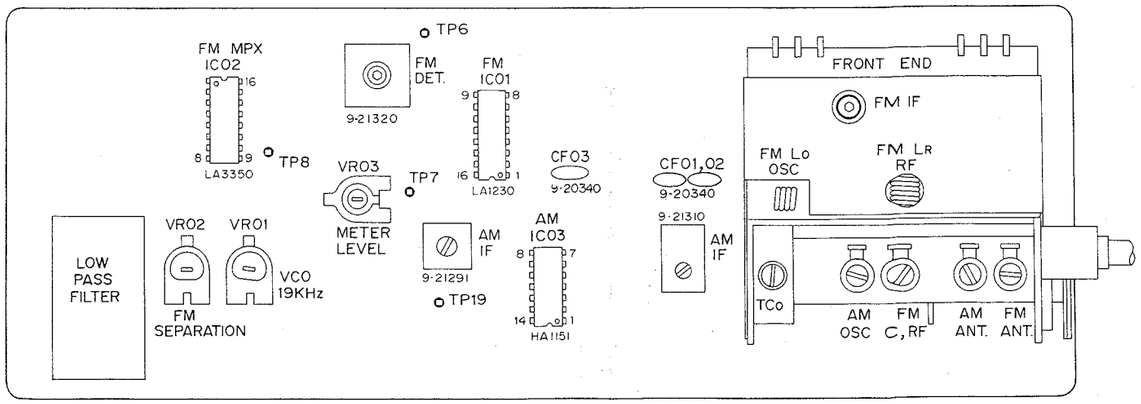


AM-FM RF/IF MPX & LW MW CONVERTER BOARD LAYOUT

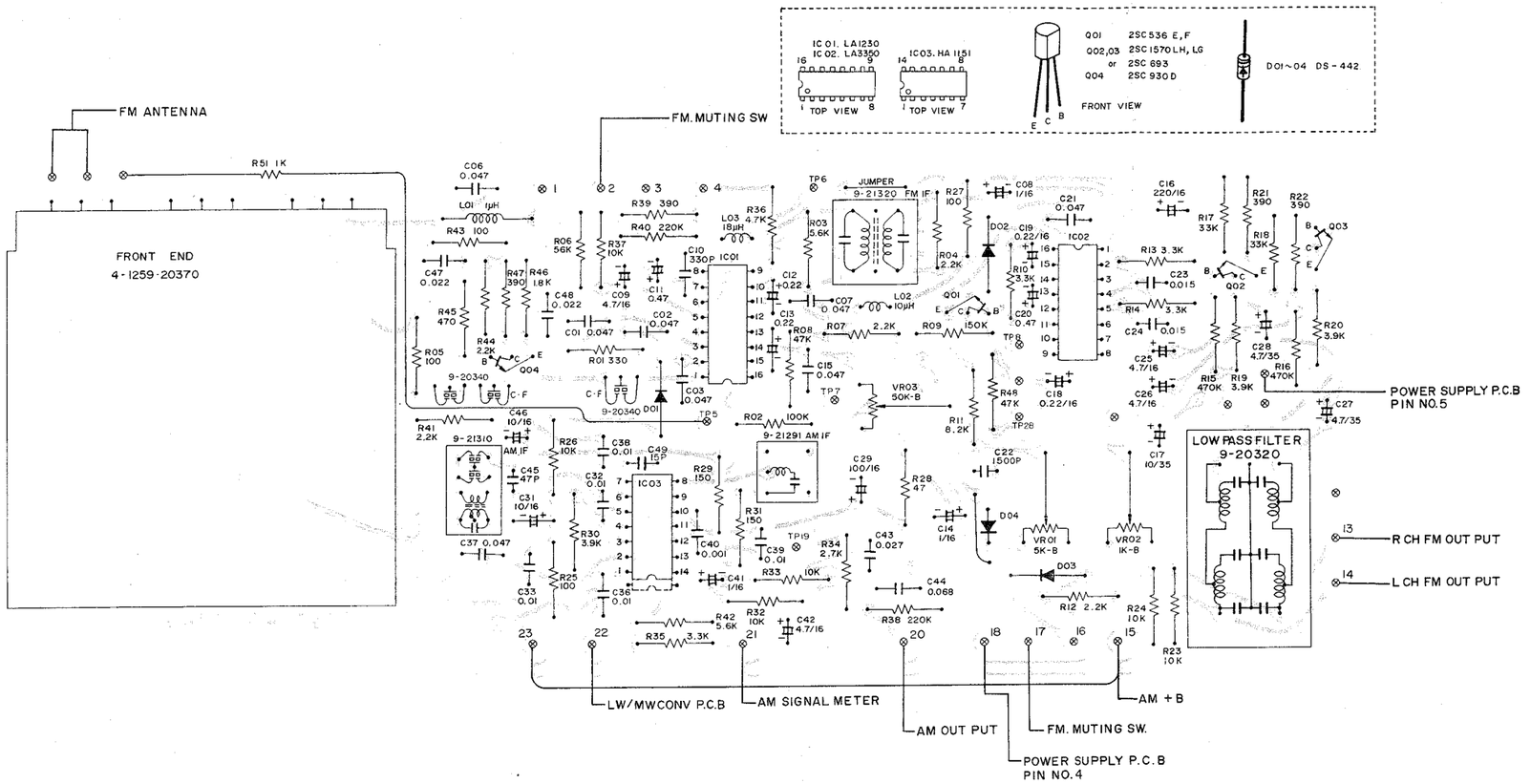
(TOP VIEW)







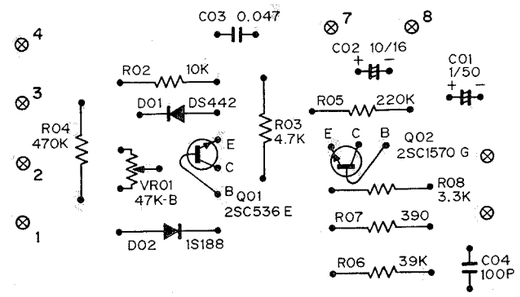
AM-FM RF/IF MPX P.C.BOARD
(BOTTOM VIEW)



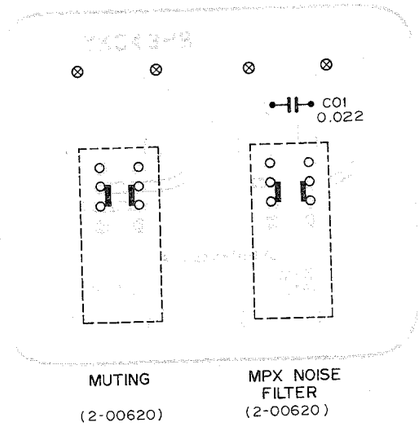
TRANSISTOR DC VOLTAGES				
SYMBOL No.	DEVICE	B	C	E
Q01	2SC536E	1.1V	0.6V	0.5V
Q02	2SC1570LH	2.0V	16.5V	1.4V
Q03	2SC1570LH	2.0V	16.5V	1.4V
Q04	2SC930D	2.2V	12.8V	1.6V

IC PIN NUMBERS VOLTAGES															
DEVICE \ PIN No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
IC01 LA1230	2.9V	2.9V	2.9V	0V	1.9V	5.5V	5.5V	5.5V	5.5V	5.5V	13.8V	3.0V	0.01V	0V	5.1V	0V
IC02 LA3350	12.6V	2.7V	4.8V	10.5V	10.4V	13.4V	0V	0.4V	6.3V	0.6V	2.0V	2.4V	1.9V	2.0V	2.0V	2.7V
IC03 HA1151	0.97V	12.7V	10.9V	12.7V	3.5V	1.24V	2.1V	8.5V	0V	13.3V	1.6V	0.7V	1.4V	0V		

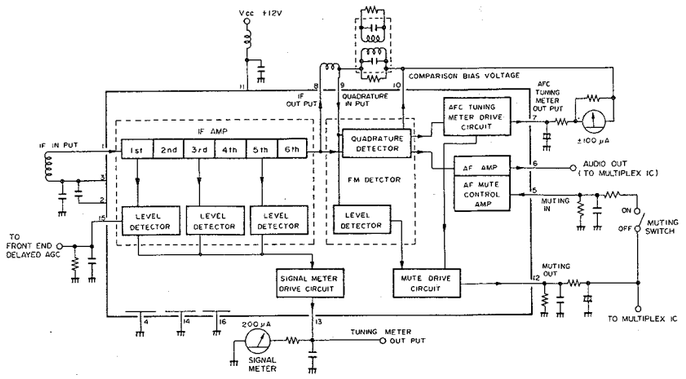
MUTING P.C.BOARD
(BOTTOM VIEW)



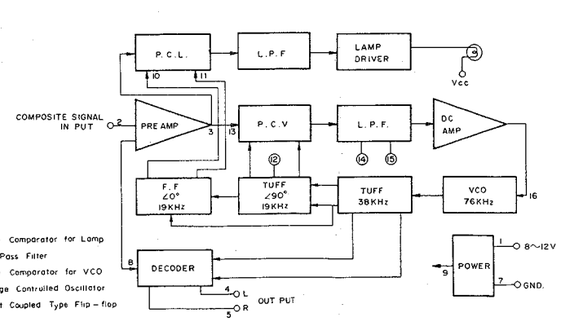
SWITCH P.C.BOARD
(BOTTOM VIEW)



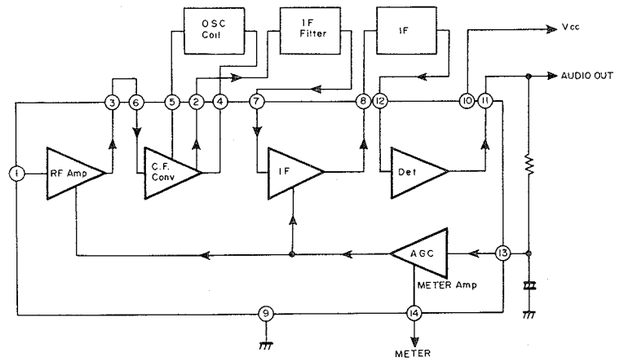
FM IF IC LA1230 SIGNAL FLOW



FM MPX IC LA3350 SIGNAL FLOW



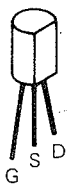
AM RF IF IC HA1151 SIGNAL FLOW



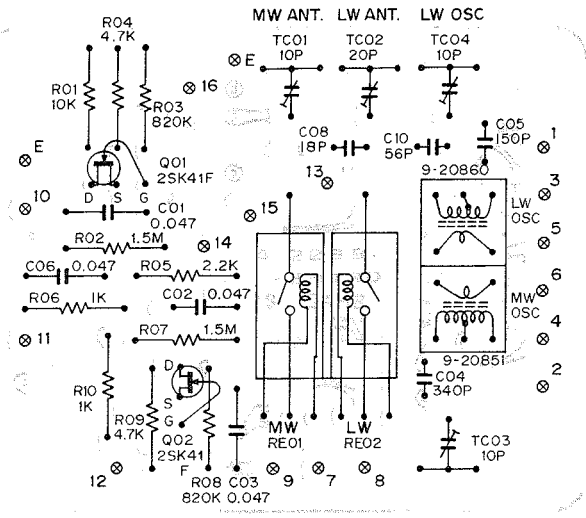
LW MW CONVERTER P.C.BOARD

(BOTTOM VIEW)

TRANSISTOR FRONT VIEW



Q01, 02 2SK41F

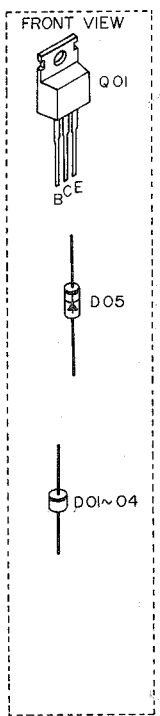


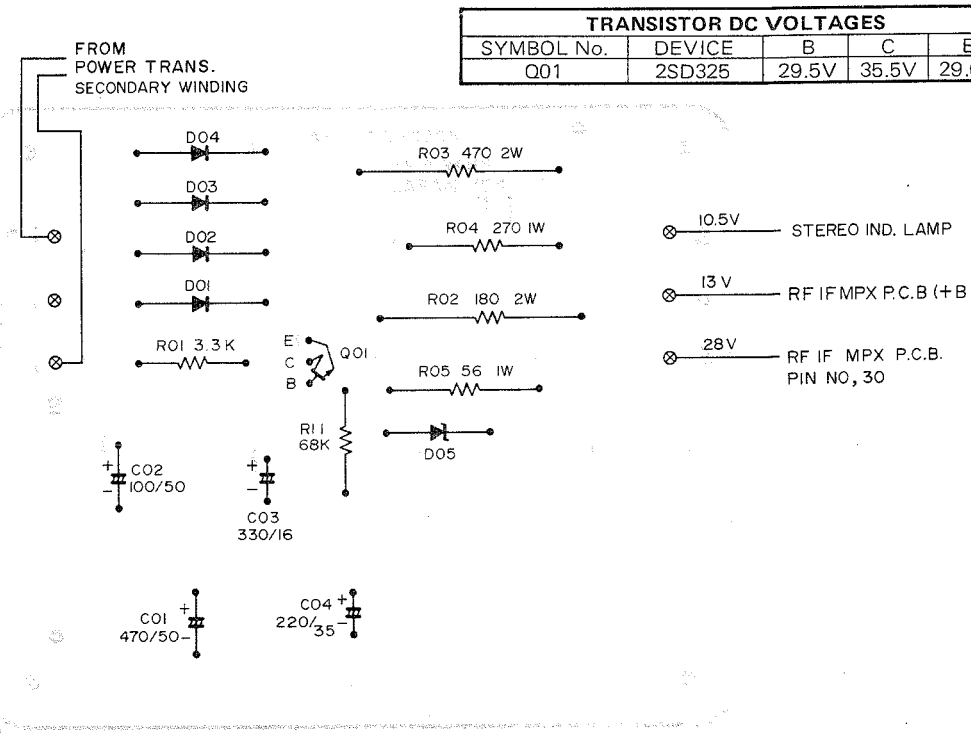
POWER SUPPLY P.C.BOARD

(BOTTOM VIEW)

TRANSISTOR DC VOLTAGES				
SYMBOL No.	DEVICE	B	C	E
Q01	2SD325	29.5V	35.5V	29.0V

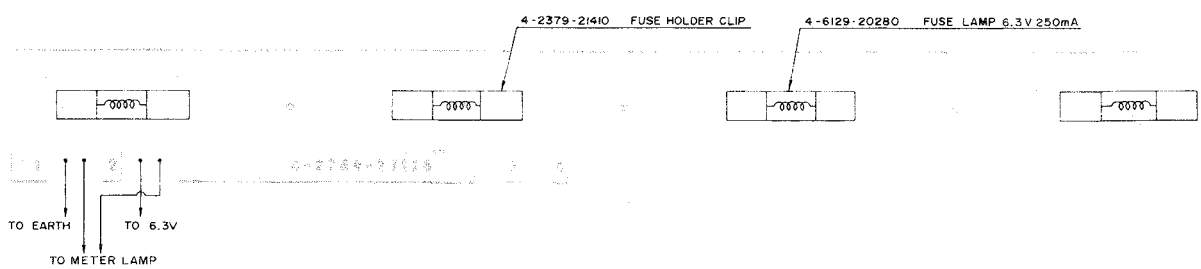
Q01 2SD325
Q02 2SC157
D01 ~ 04 10D1
D05 RD13E



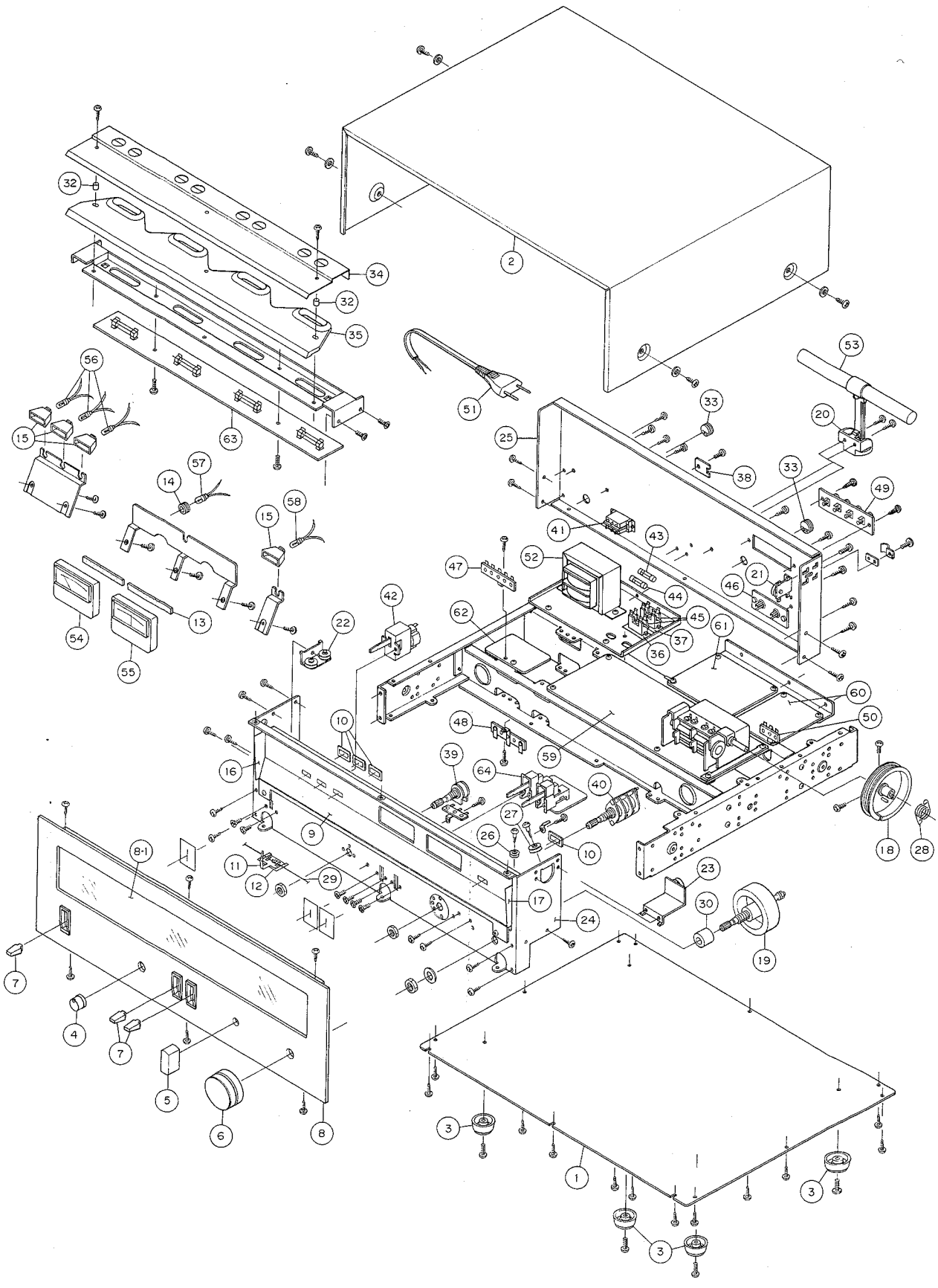


DIAL LAMP P.C.BOARD

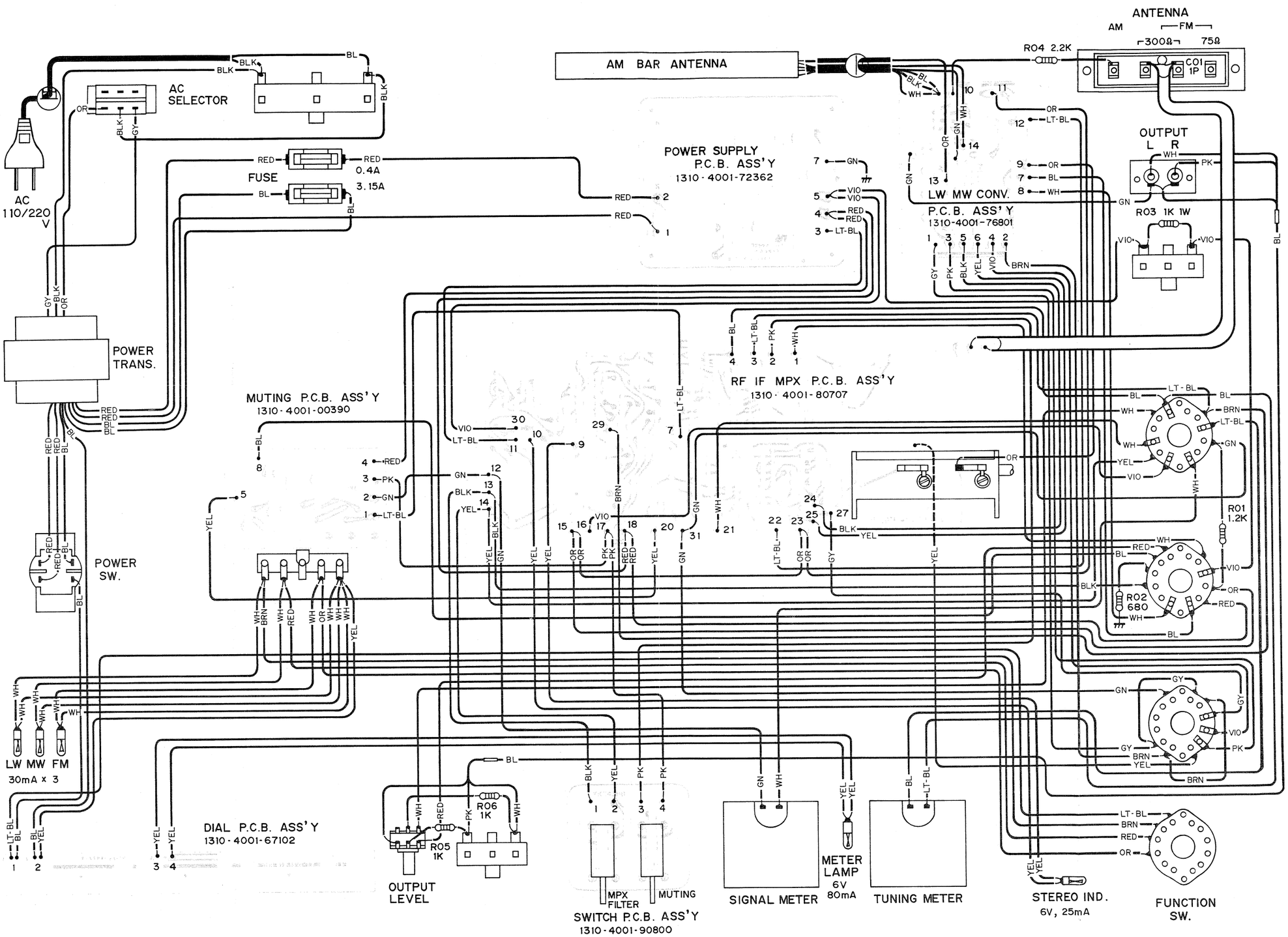
(BOTTOM VIEW)



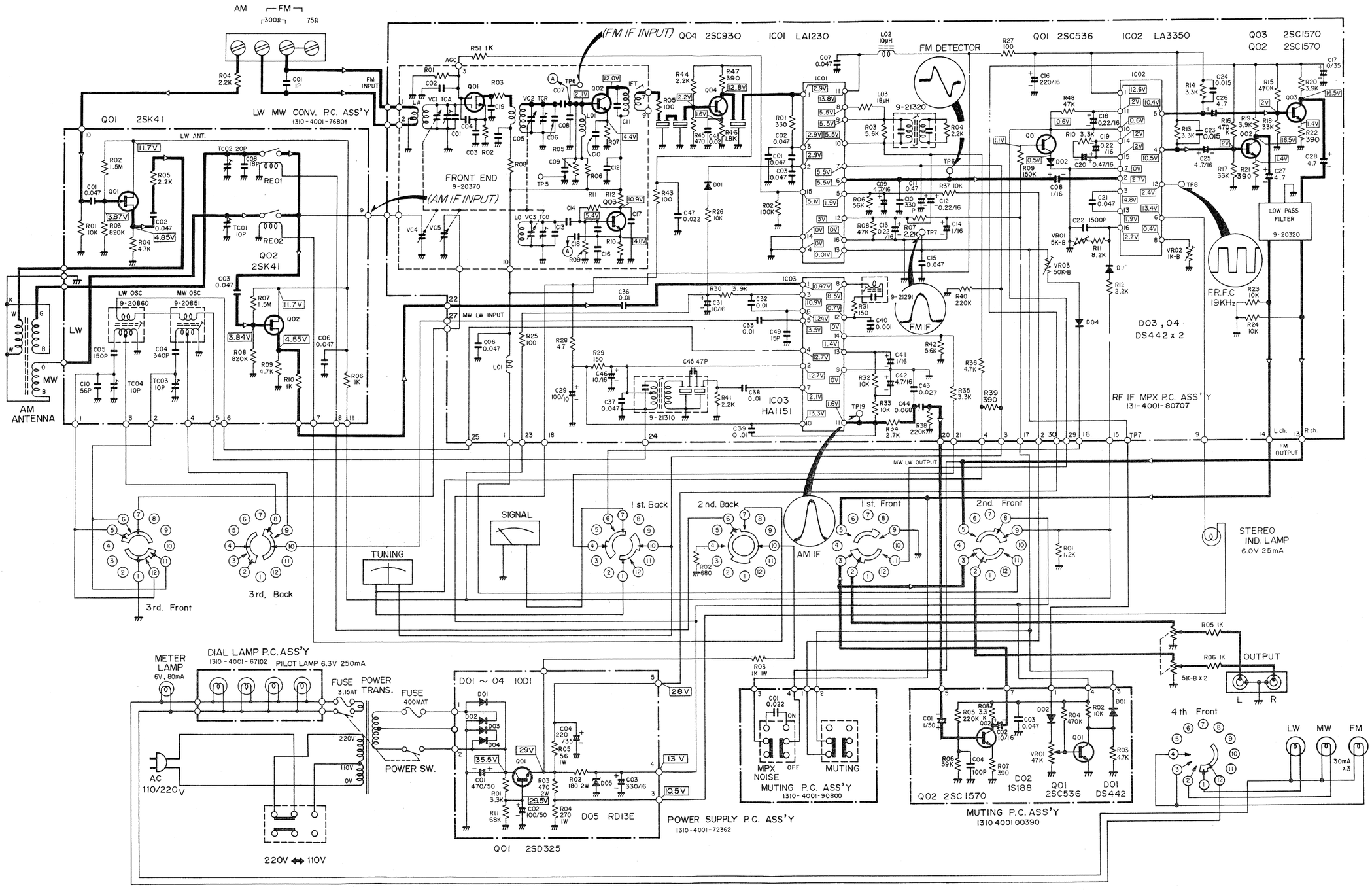
EXPLODED VIEW OF CABINET AND CHASSIS



POINT TO POINT WIRING DIAGRAM



SCHEMATIC DIAGRAM



NOTES:

1. All resistors values are indicated in "ohm" (K = 10^3 , M = 10^6).
2. All capacitors values are indicated in "μF" (P = 10^{-6}).
3. All voltages indicated on the schematics are measured under the following conditions.
   a. Use a V.T.V.M.
   b. All voltages ±10 % with respect chassis ground
   c. No signals at input terminals
   d. AC input 110/220 volts 60 Hz
4. This is a fundamental schematics diagram. Some products may be modified without notice.

PARTS LIST

PACKING PARTS LIST

Ref. No.	Parts Number	Description
	131 6 1139 58031	Box Corrugate-EXP
	131 6 2119 01441	Bag Polyethylene-EXP
	131 6 3009 20560	Pad
	131 6 3069 16050	Patching Sheet

ACCESSORIES PARTS LIST

Ref. No.	Parts Number	Description
	4 2449 20230	Antenna FM
	131 0 4004 11501	W Pin Cord
	131 6 2719 10600	Bag Fan
	131 6 4119 66500	Explanatory Booklet

CABINET PARTS LIST

Ref. No.	Parts Number	Description
1	131 2 1105 16200	Plate Bottom
2	131 2 1410 14402	Cover
3	131 2 1801 13200	Leg

APPEARANCE PARTS LIST

Ref. No.	Parts Number	Description
4	131 0 1001 42202	Knob Assy, Level Switch (Black)
	131 0 1001 42201	Knob Assy, Level Switch (Silver)
5	131 0 1001 42502	Knob Assy, Function (Black)
	131 0 1001 42501	Knob Assy, Function (Silver)
6	131 0 1001 44602	Knob Assy, Tuning (Black)
	131 0 1001 44601	Knob Assy, Tuning (Silver)
7	131 2 1601 51101	Knob, Lever Switches (Black)
	131 2 1601 51100	Knob, Lever Switches (Silver)
8	131 0 1016 29101	Panel Decorate Assy, Dress Panel (Black)
	131 0 1016 29100	Panel Decorate Assy, Dress Panel (Silver)
8-1	131 2 1205 19300	Decorate Plate Dial
	131 2 1205 19300	Decorate Plate Dial
9	131 2 1201 31003	Plate Dial
10	131 2 1503 12601	Decorate Sign
11	131 2 4101 20500	Pointer
12	131 2 5205 16000	Cushion (Pointer)
13	131 2 5205 18500	Cushion (Meter)
14	131 2 6111 10000	Bushing (Meter Lamp)
15	131 2 6111 15900	Bushing (ST, Function IND)
16	131 2 6113 30100	Shelter (Plate Dial Left)
17	131 2 6113 30101	Shelter (Plate Dial Right)

CHASSIS PARTS LIST

Ref. No.	Parts Number	Description
18	131 0 3002 11100	Drum Assy
19	131 0 3003 20400	Shaft Dial Assy
20	131 0 3008 11901	Support Antenna Assy
21	131 0 3020 05800	Pulley Assy (Panel Rear)
22	131 0 3020 10000	Pulley Assy (Panel Front Left)
23	131 0 3020 10100	Pully Assy (Panel Front)
24	131 2 3305 23600	Panel Front
25	131 2 3306 21316	Panel Rear
26	131 2 4107 10200	Pulley (Small)
27	131 2 4107 10300	Pulley (Large)
28	131 2 4111 00400	Spring Rope (Drum Assy)
29	131 2 4112 10200	Rope 0.5
30	131 2 4208 25001	Spacer (Shaft Dial Assy)
	131 2 4208 27800	Spacer (Front Panel)
32	131 2 4209 10500	Sleeve (Filter Dial)
33	131 2 6111 14200	Bushing (AC Cord, Ant. Lead)
34	131 2 6306 10901	Reflector (Filter)
35	131 2 6308 16501	Filter (Plate Dial Lamp)
36	131 2 7103 20909	Label (Fuse 3.15AT)
37	131 2 7103 20910	Label (Fuse 400MAT)
38	131 2 7104 00500	Plate Pad Switch

ELECTRICAL PARTS LIST

Ref. No.	Parts Number	Description
39	4 2222 00020	VR 5k-Bx2 (Output Level)
40	4 2312 00660	Switch Rotary (Function)
41	4 2312 01020	Switch Slide
42	4 2319 24382	Switch Lever 4P (AC Line)
43	4 2349 20131	Fuse 400 mA Slow
44	4 2349 20580	Fuse 3.15A
45	4 2359 21021	Fuse Holder
46	4 2359 22650	Socket Phono 2P (Output)
47	4 2379 20121	Terminal Lug 4P
48	4 2379 20141	Terminal 1-2P
49	4 2379 21460	Terminal 4P (Antenna Connector)
50	4 2379 21870	Terminal 1-2PR
51	4 2439 20521	Power Cord
52	4 2512 05920	Power Transformer
53	4 2579 25110	Bar Antenna AM
54	4 5112 00040	Meter Signal
55	4 5112 00050	Meter Tuning
56	4 6122 00430	Pilot Lamp, 6V 30mA
57	4 6129 20243	Pilot Lamp
58	4 6129 20539	Small Lamp, 6V 25mA
59	131 0 4001 80707	RF IF MPX P.C.B. Assy
60	131 0 4001 76801	LW MW Converter P.C.B. Assy
61	131 0 4001 72362	Power Supply P.C.B. Assy
62	131 0 4001 91700	Muting P.C.B. Assy
63	131 0 4001 67102	Dial Lamp P.C.B. Assy
64	131 0 4001 90800	Switch P.C.B. Assy
C01	C1HCD010SL-	Ceramic 1 P 50V ±0.25%
R01	R2EDPJ122A	Carbon 1.2k 1/4W ±5%
R02	R2EDPJ681A	Carbon 680 1/4W ±5%
R03	R3AXPK102A	Oxide Metal Film 1k 1W ±10%
R04	R2EDPJ222A	Carbon 2.2k 1/4W ±5%
R05,06	R2EDPJ102A	Carbon 1k 1/4W ±5%

NOTE:
1. Part orders must contain Model Number, Part Number and Descripti
2. Ordering quantity of screws and/or resistors must be multiple of 10 p

PARTS LIST

RF IF MPX P.C.B. Assy
131 0 4001 80707

Ref. No.	Parts Number	Description
	4 1259 20370	Front End (Component parts used in Front End are not serviceable and available.)
	4 2279 20320	Low Pass Filter
	4 2359 22980	Socket 16P
VR01	4 2229 22842	VR 5k-Bx1 (19 kHz)
VR02	4 2229 24210	VR 1k-B (Sepa. Con.)
VR03	4 2229 25400	VR 50k-Bx1
	4 2569 21291	IF Transformer AM (Black)
	4 2569 21310	IF Transformer AM (Red)
	4 2569 21320	IF Transformer FM (Quadrature)
L01	4 2539 20120	IF Trap
L02	4 2539 20370	10 μH ±10%
L03	4 2539 20380	18 μH ±5%
CF01,02 03	4 2279 20340	Ceramic Filter

CAPACITORS

C01,02, 03	C1HBDM473W	Semiconductor 0.047 μF 50V ±20%
C06,07	C1HYSZ473A	Ceramic 0.047 μF 50V +80,–20%
C08	C1CUEX105A	Sint. Alu. 1 μF 16V +40,–20%
C09	C1CRE-475A	Electrolytic 4.7 μF 16V
C10	C1HCSK331SL	Ceramic 330 pF 50V ±10%
C11	C1CUEX474A	Sint. Alu. 0.47 μF 16V +40,–20%
C12,13	C1CUEX224A	Sint. Alu. 0.22 μF 16V +40,–20%
C14	C1CRE-105A	Electrolytic 1 μF 16V
C15	C1HYSZ473A	Ceramic 0.047 μF 50V +80,–20%
C16	C1CRE-227A	Electrolytic 220 μF 16V
C17	C1VRE-106A	Electrolytic 10 μF 35V
C18,19	C1CUEX224A	Sint. Alu. 0.22 μF 16V +40,–20%
C20	C1CUEX474A	Sint. Alu. 0.47 μF 16V +40,–20%
C21	C1HFRM473A	Mylar 0.047 μF 50V ±20%
C22	C1HSEJ152A	Styrol 1500 pF 50V ±5%
C23,24	C1HFRK153A	Mylar 0.015 μF 50V ±10%
C25,26	C1CUEX475A	Sint. Alu. 4.7 μF 16V +40,–20%
C27,28	C1VTRM475A	Tantalum 4.7 μF 35V ±20%
C29	C1CRE-107A	Electrolytic 100 μF 16V
C31	C1CRE-106A	Electrolytic 10 μF 16V
C32,33 36	C1HFRM103A	Mylar 0.01 μF 50V ±20%
C37	C1HYSZ473A	Ceramic 0.047 F 50V +80,–20%
C38,39	C1HFRM103A	Mylar 0.01 μF 50V ±20%
C40	C1HFRM102A	Mylar 0.001 μF 50V ±20%
C41	C1CUEX105A	Sint. Alu. 1 μF 16V +40,–20%
C42	C1CRE-475A	Electrolytic 4.7 μF 16V
C43	C1HFRM273A	Mylar 0.027 μF 50V ±20%
C44	C1HFRM683A	Mylar 0.068 μF 50V ±20%
C45	C1HCSK470SL	Ceramic 47 pF 50V ±10%
C46	C1CRE-106A	Electrolytic 10 μF 16V
C47,48	C1HYSZ223A	Ceramic 0.022 μF 50V +80,–20%
C49	C1HCSJ150SL	Ceramic 15 pF 50V ±5%

Ref. No.	Parts Number	Description

SEMICONDUCTORS

D01,02 03,04	205 5 9040 44210	Diode, DS-442
IC01	206 5 0151 23015	IC, LA1230 B
IC02	206 5 0743 35012	IC, LA3350
IC03	IKK-HA1151	IC, HA1151
Q01	203 5 5100 53660	TR 2SC536 F
Q02,03	203 5 5151 57089	TR 2SC1570 LH
Q04	203 5 5500 93040	TR 2SC930 D

RESISTORS

R01	R2EDZJ331APA	Carbon	330	1/4W	±5%
R02	R2EDZJ104APA	Carbon	100k	1/4W	±5%
R03	R2EDZJ562APA	Carbon	5.6k	1/4W	±5%
R04	R2EDZJ222APA	Carbon	2.2k	1/4W	±5%
R05	R2EDZJ101APA	Carbon	100	1/4W	±5%
R06	R2EDZJ563APA	Carbon	56k	1/4W	±5%
R07	R2EDZJ222APA	Carbon	2.2k	1/4W	±5%
R08	R2EDZJ473APA	Carbon	47k	1/4W	±5%
R09	R2EDZJ154APA	Carbon	150k	1/4W	±5%
R10	R2EDZJ332APA	Carbon	3.3k	1/4W	±5%
R11	R2EDZJ822APA	Carbon	8.2k	1/4W	±5%
R12	R2EDZJ222APA	Carbon	2.2k	1/4W	±5%
R13,14	R2EDZJ332APA	Carbon	3.3k	1/4W	±5%
R15,16	R2EDZJ474APA	Carbon	470k	1/4W	±5%
R17,18	R2EDZJ333APA	Carbon	33k	1/4W	±5%
R19,20	R2EDZJ392APA	Carbon	3.9k	1/4W	±5%
R21,22	R2EDZJ391APA	Carbon	390	1/4W	±5%
R23,24	R2EDZJ103APA	Carbon	10k	1/4W	±5%
R25	R2EDZJ101APA	Carbon	100	1/4W	±5%
R26	R2EDZJ103APA	Carbon	10k	1/4W	±5%
R27	R2EDZJ101APA	Carbon	100	1/4W	±5%
R28	R2EDPJ470A	Carbon	47	1/4W	±5%
R29	R2EDZJ151APA	Carbon	150	1/4W	±5%
R30	R2EDZJ392APA	Carbon	3.9k	1/4W	±5%
R31	R2EDZJ151APA	Carbon	150	1/4W	±5%
R32,33	R2EDZJ103APA	Carbon	10k	1/4W	±5%
R34	R2EDZJ272APA	Carbon	2.7k	1/4W	±5%
R35	R2EDZJ332APA	Carbon	3.3k	1/4W	±5%
R36	R2EDZJ472APA	Carbon	4.7k	1/4W	±5%
R37	R2EDZJ103APA	Carbon	10k	1/4W	±5%
R38	R2EDZJ224APA	Carbon	220k	1/4W	±5%
R39	R2EDSJ391A	Carbon	390	1/4W	±5%
R40	R2EDZJ224APA	Carbon	220k	1/4W	±5%
R41	R2EDZJ222APA	Carbon	2.2k	1/4W	±5%
R42	R2EDZJ562APA	Carbon	5.6k	1/4W	±5%
R43	R2EDZJ101APA	Carbon	100	1/4W	±5%
R44	R2EDZJ222APA	Carbon	2.2k	1/4W	±5%
R45	R2EDZJ471APA	Carbon	470	1/4W	±5%
R46	R2EDZJ182APA	Carbon	1.8k	1/4W	±5%
R47	R2EDSJ391A	Carbon	390	1/4W	±5%
R48	R2EDZJ473APA	Carbon	47k	1/4W	±5%
R51	R2EDPJ102A	Carbon	1k	1/4W	±5%

NOTE:
1. Part orders must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and/or resistors must be multiple of 10 pcs.

PARTS LIST

MUTING P.C.B. Assy
131 0 4001 00390

Ref. No.	Parts Number	Description
VR01	4 2229 25100	VR 47k-B Semi-Fixed
	CAPACITORS	
C01	C1HRE-105A	Electrolytic 1 μF 50V
C02	C1CRE-106A	Electrolytic 10 μF 16V
C03	C1HYDZ473A	Ceramic 0.047 μF 50V +80,–20%
C04	C1HCDK101SL	Ceramic 100 pF 50V ±10%
	SEMICONDUCTORS	
D01	205 5 9040 44210	Diode, DS-442
D02	202 5 9110 18820	Diode, 1S188FM1
Q01	203 5 5100 53660	TR 2SC536 F
Q02	203 5 5151 57070	TR 2SC1570 G
	RESISCTORS	
R02	R2EDSJ103A	Carbon 10k 1/4W ±5%
R03	R2EDSJ472A	Carbon 4.7k 1/4W ±5%
R04	R2EDSJ474A	Carbon 470k 1/4W ±5%
R05	R2EDSJ224A	Carbon 220k 1/4W ±5%
R06	R2EDZJ393APA	Carbon 39k 1/4W ±5%
R07	R2EDZJ391APA	Carbon 390 1/4W ±5%
R08	R2EDZJ332APA	Carbon 3.3k 1/4W ±5%

SWITCH P.C.B. Assy
131 0 4001 90800

Ref. No.	Parts Number	Description
	4 2312 00620	Switch Lever
	CAPACITORS	
C01	C1HFRM223A	Mylar 0.022 μF 50V ±20%

LW MW CONVERTER P.C.B. Assy
131 0 4001 76801

Ref. No.	Parts Number	Description
	4 2589 20851	OSC Coil, MW
	4 2589 20860	OSC Coil, LW
RE01,02	4 2329 20210	Relay Leed
TC01	4 2249 20310	Variable Capacitor (MW Ant.) 10P
TC02	4 2249 20440	Trimmer Capacitor (LW Ant.) 20P
TC03	4 2249 20310	Variable Capacitor (MW OSC) 10P
TC04	4 2249 20310	Variable Capacitor (LW OSC) 10P
	CAPACITORS	
C01,02 03	C1HYSZ473A	Ceramic 0.047 μF 50V +80,–20%
C04	C1HSEJ341A	Styrol 340 pF 50V ±5%
C05	C1HSEJ151A	Styrol 150 pF 50V ±5%
C06	C1HYSZ473A	Ceramic 0.047 μF 50V +80,–20%
C08	C1HCDK180SL	Ceramic 18 pF 50V ±10%
C10	C1HCDK560SL	Ceramic 56 pF 50V ±10%

Ref. No.	Parts Number	Description
	SEMICONDUCTORS	
Q01,02	203 5 6500 04160	FET 2SK41 F
	RESISTORS	
R01	R2EDSJ103A	Carbon 10k 1/4W ±5%
R02	R2EDSJ155A	Carbon 1.5M 1/4W ±5%
R03	R2EDSJ824A	Carbon 820k 1/4W ±5%
R04	R2EDSJ472A	Carbon 4.7k 1/4W ±5%
R05	R2EDSJ222A	Carbon 2.2k 1/4W ±5%
R06	R2EDSJ102A	Carbon 1k 1/4W ±5%
R07	R2EDSJ155A	Carbon 1.5M 1/4W ±5%
R08	R2EDSJ824A	Carbon 820k 1/4W ±5%
R09	R2EDSJ472A	Carbon 4.7k 1/4W ±5%
R10	R2EDSJ102A	Carbon 1k 1/4W ±5%

POWER SUPPLY P.C.B. Assy
131 0 4001 72362

Ref. No.	Parts Number	Description
	CAPACITORS	
C01	C1HRE-477A	Electrolytic 470 μF 50V
C02	C1HRE-107A	Electrolytic 100 μF 50V
C03	C1CRE-337A	Electrolytic 330 μF 16V
C04	C1VRE-227A	Electrolytic 220 μF 35V
	SEMICONDUCTORS	
D01,02 03,04	DCC-10D1----N	Diode, 10D1
D05	DNN-RD13E	Diode, RD-13E
Q01	TNN-2SC1096-L	TR 2SC1096 L
or	203 5 8210 32560	TR 2SD325
	RESISTORS	
R01	R2EDSJ332A	Carobn 3.3k 1/4W ±5%
R02	R3DXBJ181A	Oxide Metal Film 180 2W ±5%
R03	R3DXBJ471A	Oxide Metal Film 470 ±5%
R04	R3AXBJ271A	Oxide Metal Film 270 1W ±5%
R05	R3AXBJ560A	Oxide Metal Film 56 1W ±5%
R11	R2EDSJ683A	Carobn 68k 1/4W ±5%

DIAL LAMP P.C.B. Assy
131 0 4001 67102

Ref. No.	Parts Number	Description
	4 2379 21410	Fuse Hold Clip
	4 6129 20280	Pilot Lamp

NOTE:
1. Part orders must contain Model Number, Part Number and Descriptic
2. Ordering quantity of screws and/or resistors must be multiple of 10 p